# FIVE YEAR
# REVIEW REPORT (TYPE 1)

## ROCK HILL CHEMICAL CO. SITE

ROCK HILL, SOUTH CAROLINA
EPA ID # SCD980844005

**DECEMBER 2000**

PREPARED BY
U. S. ENVIRONMENTAL PROTECTION AGENCY
WASTE MANAGEMENT DIVISION
REGION 4



## 1.0 INTRODUCTION

EPA Region IV conducted this Five-Year review of the Rock Hill Chemical Company Site pursuant to CERCLA Section 121(c), NCP Section 300.400(f)(4)(ii), and OSWER Directives 9355.7-02 (dated May 23, 1991), and 9355.7-02A (dated July 26, 1994). This review is required by policy and is the first five-year review since there is on-going long term remedial action for groundwater at this site. The purpose of a five-year review is to ensure that a remedial action remains protective of human health and the environment and is functioning as designed. This document will become a part of the Site file.

### 1.1 Site Location and Description

The Rock Hill Chemical Company Site (the Site), is a 4.5 acre parcel located between U.S. Highway 21 (Cherry Road) and Farlow Street, just east of Cranford Street in Rock Hill, York County, South Carolina. The property occupies two (2) plats of land: one parcel, which is owned by William C. Rutledge, Jr., encompasses the eastern portion of the Site; and the second parcel, which encompasses the western portion of the site, was previously owned by William Rutledge who later sold it to First Federal Savings Bank. The bank later sold the property and it is currently owned by Cherry Street Associates. The Site is bounded by Cherry Road and the Rock Hill Mall to the south; commercial areas to the west; residential property (single-family dwellings) and an unnamed stream to the north; and the York Shopping Plaza to the east.

### 1.2 Site Characteristics

The Site is located in the Piedmont physiographic province which consists of a broad plateau characterized by low, rounded, gently sloping hills. Piedmont sites typically have a thick layer of highly weathered residual soil and weathered rock (saprolite) overlying competent bedrock.

Residual materials at the Site generally consist of sandy, clayey silt, fine sand and silt. The contact between the saprolite and bedrock typically is gradational and is often characterized by a zone of fractured rock material. Geologic mapping of the Rock Hill area indicates that the Site is underlain by unconsolidated soils which consist of a surficial layer of alluvium underlain by saprolite, followed by gabbro. At the Site the alluvium ranged in thickness from 5.5 to 9.0 feet, and the saprolite ranged in thickness from 3.4 to 22 feet.

All groundwater in South Carolina is classified as Class GB Waters (South Carolina Regulation 61-68). This classification means that all groundwater meeting the definition of underground sources of drinking water (USDW) must meet quality standards set forth in the State Primary Drinking Water Regulations (R.61-58.5). An USDW is defined as an aquifer or portion of an aquifer which supplies or contains a sufficient quantity of water to supply a public supply system.

## 1.3 Site History

From 1960 through 1964, the Site was the location of the Rock Hill Chemical Company (RHCC), a facility where paint solvents were distilled and where, reportedly, textile dye products were recovered. While RHCC was operating, residue from RHCC's distillation still bottoms, drum bottoms, and storage tank bottoms, were placed in piles on the surface of the property and later covered with fill dirt and construction debris. During its operation, RHCC accepted waste oils and solvents from generators, separated them, and sold the extracted solvents and oils back to the generators.

The reclamation process used a single pot still, a filter press, and a small steam generator. In this operation, waste fluids were reprocessed by separating solvents from the oil phase, filtering the oil through a charcoal filter press, and repackaging the reclaimed oil for distribution to clients. The waste fluids initially were contained in drums, but as the process expanded, above ground storage tanks were added as needed. Tanks that were used to hold liquid wastes before reclamation had, on occasion, leaked onto the ground, creating a potential source of contamination.

By late 1961, the demand by RHCC clients for reclaimed oil diminished, and a surplus remained in inventory. Much of this residual inventory was consumed by RHCC as fuel for its steam generator until the company ceased operations late in 1964, or was reprocessed and sold to various customers. In October 1964, a fire at the facility caused drums of oil and chemicals to explode, releasing their contents into the environment. After the fire, the RHCC partnership was dissolved.

In 1984, First Federal Savings Bank began to construct a branch office on the lots it purchased in 1972. During construction activities, it was discovered that the property was contaminated. At the time of the 1984 discovery, First Federal Savings Bank promptly notified the State of South Carolina Department of Health and Environmental Control (SCDHEC) and employed consultants to analyze the property and determine the extent of the contamination.

First Federal Savings Bank's consultants discovered distillation still bottoms, metal drums, and other hazardous substances buried beneath the surface of First Federal Savings Bank's property. Under the supervision of SCDHEC, First Federal Savings Bank conducted a removal action on its property which was completed in November 1986, and received SCDHEC approval in December 1986.

During the 1986 removal action, the previously contaminated portion of the property was excavated, the contaminated soil was deposited in an approved landfill, and the affected portion of First Federal Savings Bank's property was covered by a clay cap. In late 1987, EPA's Emergency Response Team used CERCLA funds to remove approximately 46,000 gallons of waste from the above ground tanks, along with contaminated soil. This material was transferred to a RCRA-regulated facility for treatment/disposal.

Over the years, prior to the remedial investigation, there have been fourteen (14) sampling investigations at the Site. These investigations were directed by Federal, State and local agencies in an attempt to characterize and determine the nature and extent of environmental contamination. In these previous studies, samples were collected from soil, groundwater, surface water, sediment, as well as waste samples from drums and five (5) above-ground storage tanks. Analytical results of these samples have confirmed the presence of contaminants in all of the media sampled.

Based upon this information, EPA proposed the Site for inclusion on the National Priorities List (NPL) on June 24, 1988, and EPA finalized the Site on the NPL on February 21, 1990, with a hazard ranking score of 40.29.

On August 21, 1991, the PRPs notified EPA that they were not going to sign the Administrative Order on Consent for the RI/FS. EPA then notified the PRPs that EPA was conducting the RI/FS utilizing money from the Hazardous Substance Superfund. Field work for the RI began in March 1992.

The ROD for the Rock Hill Chemical Company Site was signed on June 27, 1994, which stated that only the groundwater needed to be remediated. The remedy selected consisted of extraction of groundwater followed by discharge to the local sewer authority.

## 2.0 DISCUSSION OF REMEDIAL OBJECTIVES

The remedial action objectives include the following: (1) eliminate or minimize the threat posed to public health and the environment from potential future exposure to hazardous substances in the groundwater; and (2) restore contaminated groundwater to levels protective of human health and the environment. The Contaminants of Concern (COCs) and their remediation goals were:

| Contaminant of Concern | Remedial Goal (ppb) |
|---|---|
| 1,2 Dichloroethene | 70 |
| Trichloroethene (TCE) | 5 |
| Vinyl Chloride | 2 |
| Manganese | 200 |

## 2.1 ARAR Review

A review of current Federal and South Carolina drinking water regulations reveals the remedial goals for most of the contaminants of concern for groundwater, established in the ROD, are the same as the current drinking water standards. The clean-up number for manganese was established from the risk assessment and there is no current State or Federal primary drinking water standard for manganese.

## 2.2 Remedy Implementation

In February 1995, an Unilateral Administrative Order (UAO) was issued, which required the RPs to perform the remedial design/remedial action (RD/RA). One RP has complied with the Order and performed all work required to date. In addition, the UAO that was issued to the RPs required that a deed restriction be put in place to prevent the installation of private wells. The one participating RP met this requirement. All work including RD, RA , and Operation and Maintenance activities have been conducted in conformance with the ROD. The Final RD/RA report was submitted to EPA and SCDHEC in September 1995 and the remedial system began operations in December 1995. The work included the installation of one extraction well (which had been installed the previous spring for the collection of pump test data), with piping to a nearby sewer system manhole that led to the treatment plant.

Representatives of EPA, the South Carolina Department of Health and Environmental Control (SCDHEC), and the RP's consultant conducted a Final Inspection of this remedial action. EPA determined during the inspection that the RP's contractor, The Fletcher Group, had constructed the remedy in accordance with the approved remedial design plans and specifications.

As part of the remedy, institutional controls in the form of deed restrictions preventing private wells from being placed on the site, were to be implemented. These are currently being put in place and are expected to be completed in 2001. There are currently no private wells in use on the site.

On February 8, 2000, an Administrative Agreement for the Recovery of Response Costs was entered into by EPA and the Responsible Parties. All of the Responsible Parties agreed to reimburse EPA for the past costs for the RI/FS and to fund the future work and oversight. Further, the Responsible Parties which previously had not been performing the remedy, agreed to reimburse the Performing Party for a portion of their past costs expended in performing the RD/RA.

## 2.3 Operation & Maintenance

All performance verification data collected to date, including oversight of construction activities by EPA and SCDHEC, as well as annual groundwater samples from the monitoring wells, indicate that remedy components have been constructed and continue to operate in accordance with the specifications developed in the RD and RA phases. In fact, the level of contamination

in the monitoring well that has shown the highest contamination has decreased dramatically from a high of 84,000 ppb of TCE during the RI phase to approximately 12,000 ppb during the initiation of the remedial design phase down to 180 ppb of TCE as of June 2000. Site inspections are conducted at least annually and discussions have also been held with the nearby residents, who have shown a minimal interest in the site. The last site inspection occurred in June 2000 during the annual sampling event conducted by the RP's consultant. Conditions on and around the site have not changed since last year.

## 3.0 RECOMMENDATIONS

Since several contaminants are still present above their remedial goals as stated in the ROD, the system should continue to operate as it has in the past. The time estimate in the ROD for the contaminants in the groundwater to reach the cleanup goals is approximately 30 years. Since five years have passed, an estimated 25 years remain until all the contaminants are below their remediation goals.

## 4.0 STATEMENT OF PROTECTIVENESS

As discussed above, the Remedial Action at the Rock Hill Chemical Company Site as prescribed in the ROD for groundwater is currently underway. Levels of contamination have decreased dramatically since the RI. Therefore, the remedy is currently protective of human health and the environment. A purpose of the Remedial Action is to protect a potential future resident should they install a private well by restoring the groundwater to a protective level.

## 5.0 NEXT FIVE-YEAR REVIEW

Since ongoing remedial action has not achieved the cleanup standards set forth in the ROD for all the groundwater, EPA guidance mandates that another five-year review will be conducted to evaluate the Site's status. Therefore, it will be necessary to re-evaluate the effectiveness of the remedy by December 2005, and should include groundwater sampling.

for Richard D. Green, Director
Waste Management Division, Region 4

12/14/00
Date